METHADONE MAINTENANCE: RESEARCH AND PRACTICE

Randall J. Kieser, M.D.
Madison Health Services

Deborah Powers
Wisconsin Bureau of Substance Abuse Services

CESSATION OF ADICTIVE OPIATE USE: BARRIERS

- WITHDRAWAL SYNDROME--major
- DRUG-INDUCED EUPHORIA-minor

Opiates: Use Freq. & Withdrawal Course

Peak Drug (hrs)	Usual freq. of use (hr)	Appearance of wdwl sxs (hrs)
meperidine 8-12	2-3	4-6
hydromorphone	3	4-5
heroin 48-72	4	8-12
morphine	5-6	14-20
codeine	3	24
methadone 72-96	8-24	36-72

Methadone Detoxification

- Legal only on inpatient basis or in methadone program
- Must be completed within 21 days if inpatient (180 in mmp)
- Not indicated during pregnancy--maintenance indicated
- For street opiate addict: initial dose 10-40 mg po qd-bid in juice

  [If unsure of physical dependence, challenge with 0.2-0.4 mg naloxone SQ and observe for 1 hour]

  Methadone effect noted in 30-60 minutes after each dose

  Also observe for drowsiness

Methadone Detoxification
(continued)

- Repeat total 24 hr methadone dose on day 2--give as bid
- Then taper according to daily exam (eg 5-10 mg qd) until dose = 5-10 mg
  then decrease 2-3 mg qd
  then observe 24-48 hr before d/c
  due to long t 1/2 of methadone
- Total duration of detoxification = 5-10 days.
  Non-pharmacologic support reduces duration by up to 50% Need to observe visitors who may smuggle opiates

Potential Advantages of Methadone Maintenance Treatment of Opiate Dependence

1. Minimal euphoria at adequate doses & maximal blockade of exogenous opiate-induced euphoria

    - lessens risk of O.D.

2. Minimal sedation
3. Minimal analgesia

FEDERAL & STATE ELIGIBILITY FOR MMT

- METHADONE MAY BE PRESCRIBED FOR PAIN TREATMENT BY ANY LICENSED PHYSICIAN
- METHADONE MAY BE PRESCRIBED FOR TREATMENT OF OPIOID DEPENDENCE BY PHYSICIANS ONLY WITH A STATE LICENSE

FDA ELIGIBILITY FOR MMT

- ONE YEAR HX PHYSIOL. OPIOID DEPENDENCE
- HX OP DEP AND LEAVING INCARCERATION
- PREGNANT AND HX OF OR CURRENT OP DEP
- IF IN MMT IN PAST 2 YR AND AT IMMINENT RISK OF RETURN TO OPIOID USE
- IF UNDER 18, MUST HAVE 2 PRIOR DETOX OR DRUG-FREE TX AND 1-YR HX OF OP DEP AND PARENT OR GUARDIAN MUST SIGN CONSENT

Methadone Maintenance Benefits

1. Reduces illicit opiate and other drug consumption
   - 55% heroin/opiate reduction in month one
   - 90% reduction by 6 months
   - 25% reduction in cocaine use
2. Reduce predatory crime: 79-86%
3. Improve rates of employment (40-60%)
   - Successful schooling
   - Stable homemaking
4. Decrease depression and suicide rates
5. Reduces HIV risk 5-10/fold

Methadone Maintenance Benefits

6. Reduces opiate dependence symptoms
- tolerance persists as does withdrawal risk
- 98% reduction in other opiate abuse and dependence symptoms by 1 yr.

7. Benefits maximal when MMT combined with drug counseling and psychiatric care
8. Safest and most effective treatment of opiate-addicted pregnant addicts
9. Relapse risk after discontinuation high until 2 yr duration of MMT

ADVERSE EFFECTS OF CHRONIC METHADONE USE

MILD-MODERATE AND TIME-LIMITED

- SEDATION, CONSTIPATION
- TRANSIENT ANKLE EDEMA & WEIGHT GAIN [f>m]
- EXCESSIVE SWEATING
- REDUCED LIBIDO

SEVERE

- NONE

NO EVIDENCE

- DELAYED RXN TIME, MEMORY DEFICITS, DRIVING PROBLEMS, ARTHRITIS, BONE DISEASE

Methadone Maintenance: Toxicity

1. No known life-threatening interactions with other drugs, but Methadone clearance increased by dilantin & other P450 inducers and decreased by rifampin and other P450 inhibitors and opioid antagonists (naloxone, naltrexone) & mixed agonist/antagonists (pentazocine, buprenorphine) can cause severe opioid withdrawal in MMT pts
2. Tolerance does persist to opioids: need higher doses of opioids for post-operative analgesia, pain conditions [e.g., sickle crises, osteomyelitis, phlebitis

DOSING ISSUES IN MMT

- Daily dosing adequate to prevent wdwl
- Initial dose: 20-40 mg daily
- Oral doses of 60-100 mg daily optimal
  [80% get blocking blood level]
- steady state achieved in 3-4 wks
- Peak: trough optimum is 2:1
- Optimal blood level: 150-600 ng/ml
- Poor gi absorption may lead to low blood levels & stress can increase Degradation: need higher oral dose [Fed regs prohibit > 120 mg daily]

MAINTENANCE DOSE: MMT

- Suppress opioid withdrawal
- No euphoria or sedation
- Reduce or eliminate opiates in random, Observed urine drug screen tests: if persistently positive, slow dose increase is often adequate

RCT: LEVELS OF CARE IN MMT

- **100 NEW MMT CLIENTS RANDOMIZED TO**
  - MM ALONE
  - MM + DRUG COUNSELING [DC]
  - OR MM + DC + MED/PSYCH CARE

- **RELAPSE RATES AT 1 YEAR:**

MM ALONE	67%
MM + DC	33%
MM + DC + MED/PSYCH	<3%

MM + DC IS MOST COST EFFECTIVE [UNSELECTED]

MCLELLAN ET AL 1993

Weighing the Costs
Annual Cost per Drug Addict

• Regular Outpatient	$1,800
• Intensive Outpatient	$2,500
• Methadone Maintenance	$3,900
• Short Term Residential	$4,400
• Long Term Residential	$6,800
• Incarceration	$25,900

National Treatment Evaluation Study, 1997; Federal Bureau of Prisons, 1997